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Figaro and Open Access to electronic information objects

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Abstract. The EC-funded FIGARO project is concerned with free access to electronic scientific information in three major respects: it tackles major issues of publication economy by introducing a novel federate business model (this aspect has already been presented by Bas Savenije in Leuven recently), it will implement the OAI-protocol (which of course is useful, but not sufficiently original to merit a separate presentation in this conference), and it is strongly concerned with technical aspects of free access to electronic information objects. While briefly mentioning the two others I will concentrate on this last aspect in my presentation and thus talk about issues such as open, vendor independent document models, identifiers and open linking/pointing techniques as prerequisites for electronic information being freely accessible.

1. Introduction

I will be discussing a European initiative, focusing on some of its technological implications. That is, I will discuss some of the basic technological choices that have to be made if we choose an open access model. In particular, I will discuss open, vendor independent document models; pointing, linking and identifying; and authentication and authorisation.

2. The Figaro project

As you all know, we are facing a critical situation in scholarly publication and communication, which is forcing universities to react in their role as content providers, owners and users. Furthermore, the Internet is evolving into the primary publication and communication platform in many disciplines. However, digital publication is still heavily modelled on the print analogy, and the innovative potential of this new medium is not being exploited. Individual university presses are too weak (economically and technically speaking) to change the basic contextual parameters of this situation.

This is why we began two cooperation projects to create a technical and organisational cooperation model for academic e-publishers:

- German Academic Publishers (GAP), launched on 1 December 2001; and
- Figaro, launched on 1 May 2002.

2.1. Objectives

The overall objective is to stimulate and support scientific communication and to return science to scientists. This will be done by building an open, Europe wide network for federating academic e-publishing institutions. This network will be based on shared technical facilities, which I will discuss later, and a common organisational component. Furthermore, we have to ensure this framework is sustainable.

These objectives are translated in our federation model. Figaro does not aim to create a super structure. Rather, we want people to use a common block of back office functionalities: work flows, document modelling, authoring support and portal functions as well as to support each other in a peer to peer network relation.

2.2. The Consortium

The Figaro consortium consists of a number of full partners: Utrecht University, Delft University, Hamburg University, Oldenburg University, Daidalos bv IT, and Florence University.

We also have a number of associate partners that are content providers: Stichting Delft Cluster, Leuven University, Lund University, Uitgeverij LEMMA BV, and Wydawnictwo DiG sc.

SPARC is a full partner in the consortium. We also have a subcontractor: SUN Microsystems/ StarOffice.

3. The choices to be made

There are three choices that have to be made in the field of standard based, open source based developments that we are trying to foster in the project:

- Open, generic document models expressed in XML (Schema) and derived from operational modelling proposals such as DocBook and OO-XML;
- Open, URN-based linking and pointing; and
- Open, generic authentication methods using LDAP.

In terms of the functionalities we would like to model using these techniques, electronic publishing involves three building blocks: input; a processing environment; and output. Authentication is required in each of these contexts. The combination of these three building blocks can in turn be used to model three kinds of operations: pre-publishing; peer reviewed publication; and public or open peer reviewing.

3.1. Document modelling

This requires techniques for document modelling. Today, we carry out "electrified" publishing and not "electronic" publishing. In order to have genuine e-publishing, we need an open document model to produce PDFs, HTMLs and other formats we do not even suspect today. This is one of the sectors Figaro is investing in. Our experience has shown that an interesting tool in this context is OpenOffice and OpenOfficeXML. An issue thus raised is whether we will be able to establish a document model that can compete with Microsoft's Office.11. This is one of the reasons we will be holding the First Open Office Conference in Hamburg in March 2003, to which I invite you all to attend.

3.2. Linking and pointing

Figaro began by considering content management. We know that all our partners will use different environments to manage content. Such a heterogeneous and distributed setting for content management makes the pointers that glue the environment together a critical factor. This pointers lead to a number of constraints: the environment cannot be built or sustained on the basis of URLs. Instead, we can use XLinks, URNs or DOI. I would suggest that you beware of using DOI, which will create the very system that we are trying to avoid.

3.3. Authentication and authorisation

In order to ensure open access, we need to need to authenticate and authorises actors. We need to know who our authors, customers and editors are. We have to determine the kind of operations they can apply on which objects and in which context. This results in a very complex, four-dimensional matrix of authentication and authorisation information. There are two means available to model this information: Microsoft's .net/ad technology; and more open source based technology.

4. Conclusions

Many people believe that technology is simply a tool and that technical choices are innocent ones. However, this is not the case. Open Access strategies cannot be built unless we are aware of this.

Control over content has little value without control over the means of access to, and manipulation and use of that content.

Purely political initiatives that are made in ignorance of the implications of technical choices are naively dangerous.

We are considering URN-Seki. I only wanted to warn you against the potential dangers of DOI.